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INTELLECTUAL PROPERTY LAW

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Attorney Docket: P56132

Sir:

Submitted herewith is the following patent application:

**Inventor: DEUK-SUNG LIM**

**Title: ELECTRO PHOTO MULTI FUNCTIONAL PERIPHERAL APPARATUS**

Please find attached hereto an application for patent which includes: Specification and Abstract, Claims, original Declaration And Power of Attorney, Assignment, and a certified copy of the foreign priority document identified below:

Verified Showing of Small Entity Status: **NO**

Drawings: Formal drawings, 8 sheets, Figures 1 through 12

Claim of priority under 35 U.S.C. §119: **YES**

\*\* The Republic Of Korea Application No. 23879/1999 filed on 24 June 1999

**FEE (see formula below): CHECK IS NOT ENCLOSED**

**Basic Fee** \$345/690 ..... \$690.00

**Additional Fees:**

Total number of claims in excess of 20: \_\_\_\_ times \$9/18 . \$0.00

Number of independent claims in excess of 3: 1 times \$39/78 ..... \$78.00

Multiple Dependent Claims \$130/260 ..... \$0.00

An Assignment is likewise enclosed: Recording Fee \$40 . . \$0.00

Filing Non-English specification ..... \$0.00

**TOTAL FEES FOR THE ABOVE APPLICATION** ..... **\$768.00**

Assistant Commissioner for Patents  
26 June 2000  
Page Two

Docket No.: P56132

**Inventor:**     **DEUK-SUNG LIM**

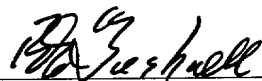
**Title:**         **ELECTRO PHOTO MULTI FUNCTIONAL PERIPHERAL  
APPARATUS**

In view of the above, it is requested that this application be accorded a filing date pursuant to 37 CFR 1.53(b).

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Respectfully submitted,



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REB/kf

**TITLE**

**ELECTRO PHOTO MULTI FUNCTIONAL PERIPHERAL APPARATUS**

**CLAIM OF PRIORITY**

This application makes reference to, incorporates the same herein, and claims all benefits accruing under 35 U.S.C. §119 from my application *ELECTRO PHOTO MULTI FUNCTIONAL PERIPHERAL APPARATUS* filed with the Korean Industrial Property Office on 24 June 1999 and there duly assigned Serial No. 23879/1999.

**BACKGROUND OF THE INVENTION**

**Field of the Invention**

The present invention relates to an electro photo multi functional peripheral apparatus, more particularly, to an electro photo multi functional peripheral apparatus which has various paper transport paths and allows a jammed paper sheet to be easily removed.

**Description of the Related Art**

Generally, in order to perform various functions, an electro photo multi

functional peripheral apparatus includes various separate optional auxiliary devices such as a sorter, a power stacker and a large scale paper feeding unit, and also has various types of paper transport paths to effectively feed recording papers.

Fig. 1 is a schematic view showing a L-type paper transport path of a conventional electro photo multi functional peripheral apparatus. it is advantageous that the entire length of the L-type paper transport path be short. However, if an optional auxiliary device 2 such as a power stacker is mounted, since the paper transport path is leaned to a left side of a main body 1, optional auxiliary device 2 is overlapped with a feeding unit 3. Therefore, it is difficult or impossible to use the optional device and the feeding unit at the same time. Thus, there is a disadvantage in an expansibility of the optional device.

Fig. 2 is a schematic view showing a S-type paper transport path of a conventional electro photo multi functional peripheral apparatus. In this type, a separate rack is needed to mount optional auxiliary device 2.

In the conventional electro photo multi functional peripheral apparatus as disclosed above, since it is not easy to use optional auxiliary device 2, the reliability of the apparatus is lowered. Further, since the entire paper transport path is located in main body 1, it is not easy to remove a jammed paper sheet.

1            Particularly, when a paper jam occurs, it is very complicated to remove the  
2 jammed paper sheet. First, a top cover 4 is opened and a developer 5 is taken out of  
3 the main body. Then, the jammed paper sheet is removed. After that, the developer  
4 is received again in the main body and the top cover is closed. Further, in case the  
5 jammed paper sheet is mechanically caught by a roller, it is very difficult to remove  
6 the jammed paper sheet, since the jammed paper sheet is crumpled or torn.

### **SUMMARY OF THE INVENTION**

          Accordingly, an object of the present invention is to provide an electro photo  
multi functional peripheral apparatus which has various paper transport paths so as  
to increase the expansibility of an optional device.

          Another object of the present invention is to provide an electro photo multi  
functional peripheral apparatus which allows a jammed paper sheet to be easily  
removed.

          In order to accomplish the above object, the present invention provides an  
electro photo multi functional peripheral apparatus comprising a main body which is  
provided with an optional auxiliary device such as a sorter, a power stacker or a large  
scale paper feeding unit located at one side thereof. A feeding unit for feeding sheet

1 of recording paper is mounted at the other side of the main body. A feeding cassette  
2 is mounted at a lower portion of the main body. A multipurpose feeding unit  
3 assembly is removably mounted at a center portion of the main body and horizontally  
4 transports the recording paper fed from the feeding unit. The main body is formed  
5 with a first, a second, and a third paper transport paths for discharging the recording  
6 paper fed from the optional device.

7 In another aspect of the present invention, there is provided an electro photo  
8 multi functional peripheral apparatus comprising a main body having an optional  
9 device such as a sorter, a power stacker, a large scale paper feeding unit and a  
10 multipurpose feeding unit at one side thereof. A feeding unit for feeding a recording  
11 paper is mounted at the other side of the main body. A multipurpose feeding unit  
12 assembly is removably mounted at a center portion of the main body and horizontally  
13 transports the recording paper fed from the feeding unit. The multipurpose feeding  
14 unit assembly comprises a jammed paper removing means for easily removing a  
15 jammed paper.

16 Preferably, the multipurpose feeding unit assembly comprises a rectangular  
17 base member. At least one or more cover plates are mounted on an upper face of the  
18 base member, paper feeding means for feeding the recording paper is mounted at the

1 base member and the cover plate. A power transmitting means transmits power to the  
2 paper feeding means. A guiding means guides a backward and forward movement  
3 of the multipurpose feeding unit assembly.

4 Preferably, the paper feeding means comprises a plurality of feeding roller  
5 which are mounted at an interval on a rear side of the base member and are rotated  
6 by the power transmitting means. A plurality of pinch rollers are rotatably mounted  
7 at the cover plates, so as to be respectively opposite to the feeding rollers.

8 Preferably, the jammed paper removing means is composed so that one of the  
9 cover plates is formed to be revolved with a hinge shaft in the center and an elastic  
10 member is provided between the cover plate and the base member.

11 Preferably, the guiding means comprises guiding rollers which are rotatably  
12 mounted at both sides of the base member.

13 Preferably, the electro photo multi functional peripheral apparatus further  
14 comprises a front cover which is fixed to a front face of the base member. The front  
15 cover has a grasping groove at a center portion thereof to facilitate operation of  
16 receiving and withdrawing the multipurpose feeding unit assembly, by the grasping  
17 groove.

18 Preferably, the electro photo multi functional peripheral apparatus further

1 comprises a plurality of position guiding members, which are fixed to a rear side of  
2 the base member, and a plurality of position guiding holes, which are formed at an  
3 inner portion of the main body. The position guiding members are respectively  
4 inserted thereinto.

### 5 BRIEF DESCRIPTION OF THE DRAWINGS

6 A more complete appreciation of the invention, and many of the attendant  
advantages, thereof, will be readily apparent as the same becomes better understood  
by reference to the following detailed description when considered in conjunction  
with the accompanying drawings in which like reference symbols indicate the same  
or similar components, wherein:

Fig. 1 is a schematic view showing a L-type paper transport path of a  
conventional electro photo multi functional peripheral apparatus.

Fig. 2 is a schematic view showing a S-type paper transport path of a  
conventional electro photo multi functional peripheral apparatus.

Fig. 3 is a schematic view showing a structure of an electro photo multi  
functional peripheral apparatus according to the present invention.

Fig. 4 is a schematic view of an embodiment of the electro photo multi



functional peripheral apparatus according to the present invention.

Fig. 5 is a perspective view of a multipurpose feeding unit assembly of the electro photo multi functional peripheral apparatus according to the present invention.

Fig. 6 is a plan view of the multipurpose feeding unit assembly of the electro photo multi functional peripheral apparatus according to the present invention.

Fig. 7 is a cross sectional view taken along a line VII-VII of Fig. 6.

Fig. 8 is a cross sectional view taken along a line VIII-VIII of Fig. 6.

Fig. 9 is a front view showing a state that cover plate is closed in order to explain an operation of removing a jammed paper sheet.

Fig. 10 is a front view showing a state that cover plate is closed in order to explain an operation of removing a jammed paper sheet.

Fig. 11 is an enlarged view of a C portion of Fig. 4.

Fig. 12 is an enlarged view of a D portion of Fig. 4.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the following, a preferred embodiment of the present invention is described in detail with reference to Figs. 1 to 5.

1           Fig. 1 is a schematic view showing a L-type paper transport path of a  
2           conventional electro photo multi functional peripheral apparatus. Fig. 2 is a  
3           schematic view showing a S-type paper transport path of the conventional electro  
4           photo multi functional peripheral apparatus. In this type, a separate rack is needed to  
5           mount an optional device 2, such as a scanner.

6           In the conventional electro photo multi functional peripheral apparatus as  
7           disclosed above, since it is not easy to use optional device 2, the reliability of the  
8           apparatus is lowered. Further, since all of the paper transport path are formed in main  
9           body 1, it is not easy to remove a jammed paper sheet when a paper sheet is jammed.

10          Fig. 3 is a schematic view showing a structure of an electro photo multi  
11          functional peripheral apparatus according to the present invention. As shown in Fig.  
12          3, the electro photo multi functional peripheral apparatus according to the present  
13          invention is provided with a separate receiving space 11 at a center portion of a main  
14          body 10. A separate multipurpose feeding unit assembly 20 for horizontally  
15          transporting a paper sheet is removably mounted in receiving space 11. Therefore,  
16          when a paper jam occurred in multipurpose feeding unit assembly 20, the jammed  
17          paper sheet can be easily removed. The electro photo multi functional peripheral  
18          apparatus has a simple structure to secure the expansibility of the optional device and

be facile to remove the jammed paper sheet.

The L type paper transport path in Fig. 1 is used here as a basic design. Multipurpose feeding unit assembly 20 is mounted at the center portion of main body 10, whereby an entire structure of the paper transport path is formed into the S type.

An optional device 12 is mounted at one side of main body 10. A feeding unit 13 is mounted at the other side of main body 10. A paper sheets fed from feeding unit 13 is horizontally transported along multipurpose feeding unit assembly 20 and then discharged along an upper side of main body 10. Further, if necessary, a large scale cassette 14 is mounted at the side of main body 10, so that the paper sheet can be fed to multipurpose feeding unit assembly 20. Alternatively, the paper sheet can be fed from a feeding cassette 15 located at a lower portion of main body 10 and vertically transported and then discharged, whereby the paper transport path can be formed into various types.

In an embodiment of the electro photo multi functional peripheral apparatus of the present invention, as shown in Fig. 4, a duplex module 12' as one of the optional device may be mounted at one side of main body 10. Duplex module 12' uprightly feeds a recording paper from an upper portion of the main body 10.

Duplex module 12' may be removably mounted at main body 10 or fixedly

1 mounted at main body 10. In the following embodiment of the present invention  
2 duplex module 12' is attached at the main body 10. As shown in Figs. 5 to 10,  
3 multipurpose feeding unit assembly 20 comprises a rectangular base member 21. A  
4 guiding means is disposed at a portion of base member 21 and guides a backward and  
5 forward movement of multipurpose feeding unit assembly 20. A front cover 22 is  
6 fixed to a front face of base member 21. At least one cover plate 23 is mounted on  
7 an upper face of base member 21. A paper feeding means is mounted at base member  
8 21 and cover plate 23. A power transmitting means transmits power to the paper  
9 feeding means. A jammed paper removing means easily removes a jammed paper  
10 sheet when a paper sheet is jammed.

11 In addition, bent-down portions 24 and 25 are respectively formed at both side  
12 ends of base member 21. Guiding rollers 26 and 27 are rotatably mounted at the  
13 insides of bent-down portions 24 and 25. Guiding rollers 26 and 27 are rotatably  
14 supported by supporting shafts 28 and 29. Multipurpose feeding unit assembly 20  
15 can be moved backward and forward by guiding rollers 26 and 27, so as to be  
16 slidingly received in receiving space 11 of main body 10.

17 A grasping groove 22a is formed at a center portion of front cover 22.  
18 Therefore, operation of receiving and withdrawing multipurpose feeding unit

assembly 20 is easily performed by grasping groove 22a.

Cover plates 23 and 23' are mounted on the upper face of base member 21 so as to have a desired height difference between cover plates 23 and 23'. Base member 21 transports the recording paper therebetween. A paper feeding means is provided at each of base member 21 and the cover plates 23 and 23'.

A plurality of roller shafts 31 and 32 are rotatably supported at an interval on a rear side of base member 21. A plurality of feeding rollers 41 and 42 are respectively fixed to roller shafts 31 and 32. Feeding rollers 41 and 42 are outwardly protruded through openings 21b formed on base member 21.

A plurality of pinch rollers 51 and 52 are rotatably mounted at a bottom face of cover plates 23 and 23' by supporting means such as brackets, etc. so as to be opposite to feeding rollers 41 and 42 of base member 21. Pinch rollers 51 and 52 are closely contacted with feeding rollers 41 and 42 so as to be rotated by rotational operations of feeding rollers 41 and 42 and feed the recording papers. Pinch rollers 51 and 52 are slightly protruded outwardly through openings 23a and 23a' formed on cover plates 23 and 23'.

The power transmitting means comprises pulleys 61 and 62 which are fixedly coupled to each end of roller shafts 31 and 32 and belts 71 and 72 which connect

1 pulleys 61 and 62 with each other to transmit rotational power. A transmission gear  
2 35 is fixed to outmost roller shaft 34 (or 31) out of roller shafts 31 and 32.  
3 Transmission gear 35 is rotated by a power generating means such as a motor. Thus,  
4 entire roller shafts 31 and 32 are rotated in a direction.

5 Transmission gear 35 is engaged with a gear receiving power from a power  
6 generating means when multipurpose feeding unit assembly 20 is completely  
7 received in receiving space 11.

8 A plurality of position guiding members 73 are fixed to a rear side of base  
9 member 21. Position guiding members 73 are respectively inserted into position  
10 guiding holes 74 formed at an inner portion of main body 10. Position guiding holes  
11 74 precisely guide the position of multipurpose feeding unit assembly 20 and prevent  
12 multipurpose feeding unit assembly 20 received in receiving space 11 from being  
13 arbitrarily moved forward.

14 The jammed paper removing means is so constructed that a one of cover plates  
15 23 and 23' is formed to be revolved with a hinge shaft 81 in the center and an elastic  
16 member such as a tension coil spring is provided between cover plate 23 and base  
17 member 21.

18 A grasping portion 83 is formed at an end of cover plate 23 so as to facilitate

1 an operation of opening cover plate 23. Grasping portion 83 is slightly bent upward.

2 The jammed paper removing means may be advantageously provided at the  
3 other cover plate 23'.

4 Preferably, in order to prevent multipurpose feeding unit assembly 20 from  
5 being completely withdrawn when multipurpose feeding unit assembly 20 is forward  
6 moved to remove the jammed paper, a separate latching means is provided in  
7 receiving space 11. For example, latching portions are respectively formed in each  
8 portion of base member 21 and receiving space 11, so that multipurpose feeding unit  
9 assembly 20 is caught by the latching portions when the withdrawing operation of  
10 multipurpose feeding unit assembly 20 is completed.

11 Duplex module 12' is advantageously provided at one side of main body 10,  
12 as shown in Fig. 11. The electro photo multi functional peripheral apparatus of the  
13 present invention then further comprises a first guiding chute 91 and a second  
14 guiding chute 92, which are mounted at an inside of main body 10. A first paper  
15 transport path 93 guides a paper sheet fed from multipurpose feeding unit assembly  
16 20. A second paper transport path 94 guides a paper sheet fed from feeding cassette  
17 15. A third paper transport path 95 guides a paper sheet fed from duplex module 12'.

18 Further, as shown in Fig. 12, if large scale cassette 14 is used, paper sheets fed

1 from large scale cassette 14 are fed through a paper-receiving opening 96 formed in  
2 a portion of main body 10 and then continuously fed along multipurpose feeding unit  
3 assembly 20.

4 In the electro photo multi functional peripheral apparatus according to the  
5 present invention as described above, separate multipurpose feeding unit assembly  
6 20 is adapted to be received in receiving space 11 and used as a part of the paper  
7 transport path. Therefore, if the recording paper fed from feeding unit 13 is entered  
8 into multipurpose feeding unit assembly 20, feeding roller 41 and 42 and pinch roller  
9 51 and 52 are rotated by the transmission means and transports the recording paper.  
10 And then, the recording paper discharged to an outlet of the multipurpose feeding  
11 unit assembly 20 is transported along first paper transport path 93 formed by second  
12 guiding chute 92 to a predetermined location as shown in Fig. 11.

13 If separate large scale cassette 14 is used, as shown in Fig. 12, recording paper  
14 fed from large scale cassette 14 enters through a paper-receiving opening 96, formed  
15 in a portion of main body 10, and is then transported through the paper path, which  
16 is the same in multipurpose feeding unit assembly 20, to first paper transport path 93.

17 If a feeding cassette mounted in main body 10 is used instead of large scale  
18 cassette 14, the recording paper is transported through a second paper transport path



1 94 formed between first guiding chute 91 and second guiding chute 92. When duplex  
2 module 12' is used, the recording paper is transported along a third paper transport  
3 path 95 formed by first guiding chute 91 and second guiding chute 92.

4 If the recording paper is jammed in multipurpose feeding unit assembly 20,  
5 first, a user pulls multipurpose feeding unit assembly 20 in a direction corresponding  
6 to arrow E of Fig. 6. At this time, grasping groove 22a in front cover 22 assists in the  
7 withdrawing operation of multipurpose feeding unit assembly 20. Then, after  
8 multipurpose feeding unit assembly 20 is withdrawn by a desired length, the user  
9 raises cover plate 23 upward. Cover plate 23 is then revolved with hinge shaft 81 in  
10 the center, so that a portion between feeding rollers 41 and 42 and pinch rollers 51  
11 and 52 is exposed to the outside. Therefore, the user can easily remove the jammed  
12 paper.  
13

14 After that, the user pushed multipurpose feeding unit assembly 20 in the  
15 direction of arrow F of Fig. 6, so that multipurpose feeding unit assembly 20 is  
16 received again in receiving space 11. When the receiving operation of multipurpose  
17 feeding unit assembly 20 is completed, position guiding members 71 formed at the  
18 rear side of multipurpose feeding unit assembly 20 are entered into position guiding  
holes 74 formed at the inner portion of main body 10. Therefore, the position of the

1 multipurpose feeding unit assembly 20 is exactly guided and prevented from being  
2 arbitrarily moved forward.

3 While the invention has been described in connection with specific and  
4 preferred embodiments thereof, it is capable of further modifications without  
5 departing from the spirit and scope of the invention. This application is intended to  
6 cover all variations, uses, or adaptations of the invention, following, in general, the  
7 principles of the invention and including such departures from the present disclosure  
8 as come within known or customary practice within the art to which the invention  
9 pertains, or as are obvious to persons skilled in the art, at the time the departure is  
10 made. It should be appreciated that the scope of this invention is not limited to the  
11 detailed description of the invention hereinabove, which is intended merely to be  
12 illustrative, but rather comprehends the subject matter defined by the following  
13 claims.

**WHAT IS CLAIMED IS:**

1. In an electro photo multi functional peripheral apparatus comprising:  
a main body having an optional auxiliary device located at one side thereof;  
a feeding unit for feeding sheets of recording paper, located at an other side of  
the main body;  
a feeding cassette mounted at a lower portion of the main body; and  
a feeding unit assembly removably mounted at a central portion of the main  
body, for transporting the sheets of recording paper from the feeding  
unit;

*the improvement comprising:*

a means for increasing expasibility of the optional auxiliary device, said means  
comprising a first paper transport path, a second, and a third paper  
transport paths for discharging the sheets of recording paper fed from  
the optional auxiliary device.

2. In an electro photo multi functional peripheral apparatus comprising:  
a main body having an optional auxiliary device located at one side thereof;

a feeding unit for feeding sheets of recording paper, located at an other side of  
the main body;

a feeding unit assembly removably mounted at a central portion of the main  
body, for transporting the sheets of recording paper from the feeding  
unit,

*the improvement comprising:*

a feeding unit assembly comprising a jammed paper removing means for easily  
removing a jammed sheet of paper.

3. The apparatus of claim 2, wherein said jammed paper removing means  
comprises:

a rectangular base member;

at least one cover plate mounted on an upper face of the base member;

paper feeding means for feeding the sheets of recording paper, said paper  
feeding means mounted at the base member and the cover plate; and

a guiding means for guiding a backward and forward movement of the feeding  
unit assembly.

1           4. The apparatus of claims 3, wherein said paper feeding means comprises:  
2           a plurality of powered feeding rollers mounted on a rear side of the base  
3           member; and  
4           a plurality of pinch rollers rotatably mounted at the cover plates located  
5           opposite the feeding rollers.

1           5. The apparatus of claims 4, wherein at least one cover plate of said jammed  
2           paper removing means comprises a hinge shaft centrally located in said cover plate,  
3           said hinge shaft adapted for revolving said cover plate, and wherein an elastic  
4           member is provided between the cover plate and the base member.  
5           

1           6. The apparatus of claim 3, wherein the guiding means is a pair of guiding  
2           rollers rotatably mounted at the base member.  
3           

1           7. The apparatus of claim 3, comprising a front cover fixed to a front face of  
2           the base member, the front cover comprising a grasping groove at a central portion  
3           thereof to facilitate receiving and withdrawing the feeding unit assembly.

1 8. The apparatus of claim 3, further comprising:

2 a plurality of position guiding members fixed to a rear side of the base  
3 member; and

4 a corresponding plurality of position guiding holes formed at an inner portion  
5 of the main body, into which the position guiding members are  
6 respectively inserted.

7 9. A method of facilitating removal of a paper jam in an electro photo multi  
8 functional peripheral apparatus comprising:

9 said method comprising the steps of:

10 (1) providing the apparatus with a jammed paper removing means for  
11 easily removing a jammed sheet of paper.

12 (2) detecting a paper jam; and

13 (3) operating the jammed paper removing means in a manner such that  
14 the jammed paper is removed.

15 10. The method of claim 9, wherein said jammed paper removing means  
16 comprising:

3 a rectangular base member;  
4 at least one cover plate mounted on an upper face of the base member;  
5 paper feeding means for feeding the sheets of recording paper, said paper  
6 feeding means mounted at the base member and the cover plate; and  
7 a guiding means for guiding a backward and forward movement of the feeding  
8 unit assembly.

11. The method of claim 10, wherein said jammed paper removing means  
comprising:

a plurality of powered feeding rollers mounted on a rear side of the base  
member; and  
a plurality of pinch rollers rotatably mounted at the cover plates located  
opposite the feeding rollers.

12. The method of claim 11, wherein said jammed paper removing means  
comprising at least one cover plate of said jammed paper removing means comprises  
a hinge shaft centrally located in said cover plate, said hinge shaft adapted for  
revolving said cover plate, and wherein an elastic member is provided between the

cover plate and the base member.

13. A process for manufacturing an electro photo multifunction apparatus, said process comprising the steps of:

(1) providing a main body having an optional auxiliary device located at one side thereof;

(2) providing a feeding unit for feeding sheets of recording paper, located at an other side of the main body; and

(3) providing a feeding unit assembly removably mounted at a central portion of the main body, for transporting the sheets of recording paper from the feeding unit, *the improvement in said process comprising:* providing said feeding unit assembly with a jammed paper removing means for easily removing a jammed sheet of paper.

14. The process of claim 13, wherein said jammed paper removing means comprises:

a rectangular base member;

at least one cover plate mounted on an upper face of the base member;



5 paper feeding means for feeding the sheets of recording paper, said paper  
6 feeding means mounted at the base member and the cover plate; and  
7 a guiding means for guiding a backward and forward movement of the feeding  
8 unit assembly.

1 15. The process of claim 13, wherein said paper feeding means comprises:  
2 a plurality of powered feeding rollers mounted on a rear side of the base  
3 member; and  
4 a plurality of pinch rollers rotatably mounted at the cover plates located  
5 opposite the feeding rollers.

6 16. The process of claim 14, wherein at least one cover plate of said jammed  
7 paper removing means comprises a hinge shaft centrally located in said cover plate,  
8 said hinge shaft adapted for revolving said cover plate, and wherein an elastic  
9 member is provided between the cover plate and the base member.

1 17. The process of claim 13, wherein the guiding means is a pair of guiding  
2 rollers rotatably mounted at the base member.

18. The process of claim 13, wherein said jammed paper removing means comprises a front cover fixed to a front face of the base member, the front cover comprising a grasping groove at a central portion thereof to facilitate receiving and withdrawing the feeding unit assembly.

19 The process of claim 13, wherein said jammed paper removing means comprises:

a plurality of position guiding members fixed to a rear side of the base member; and

a corresponding plurality of position guiding holes formed at an inner portion of the main body, into which the position guiding members are respectively inserted.

## ABSTRACT

An electro photo multi functional peripheral apparatus comprises a main body which is provided with an optional device such as a sorter, a power stacker and a large scale paper feeding unit at one side thereof. A feeding unit for feeding a recording paper is mounted at the other side of the main body. A feeding cassette is mounted at a lower portion of the main body. A multipurpose feeding unit assembly is removably mounted at a center portion of the main body and horizontally transports the recording paper fed from the feeding unit. The main body is formed with a first, a second and a third paper transport paths for discharging the recording paper fed from the optional device.

FIG. 1  
**(Prior Art)**

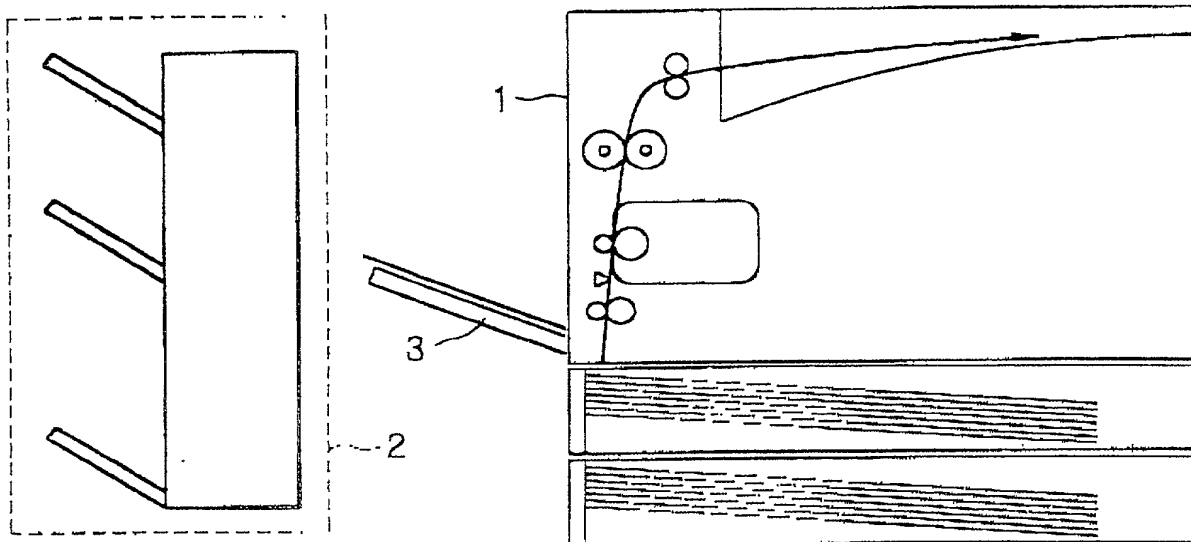


FIG. 2  
**(Prior Art)**

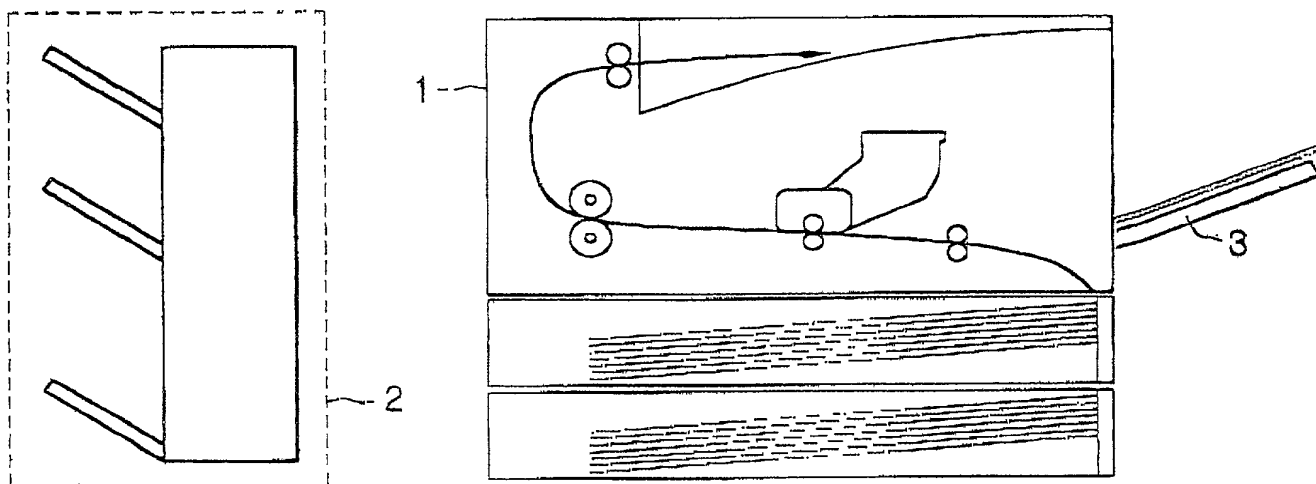


FIG. 3

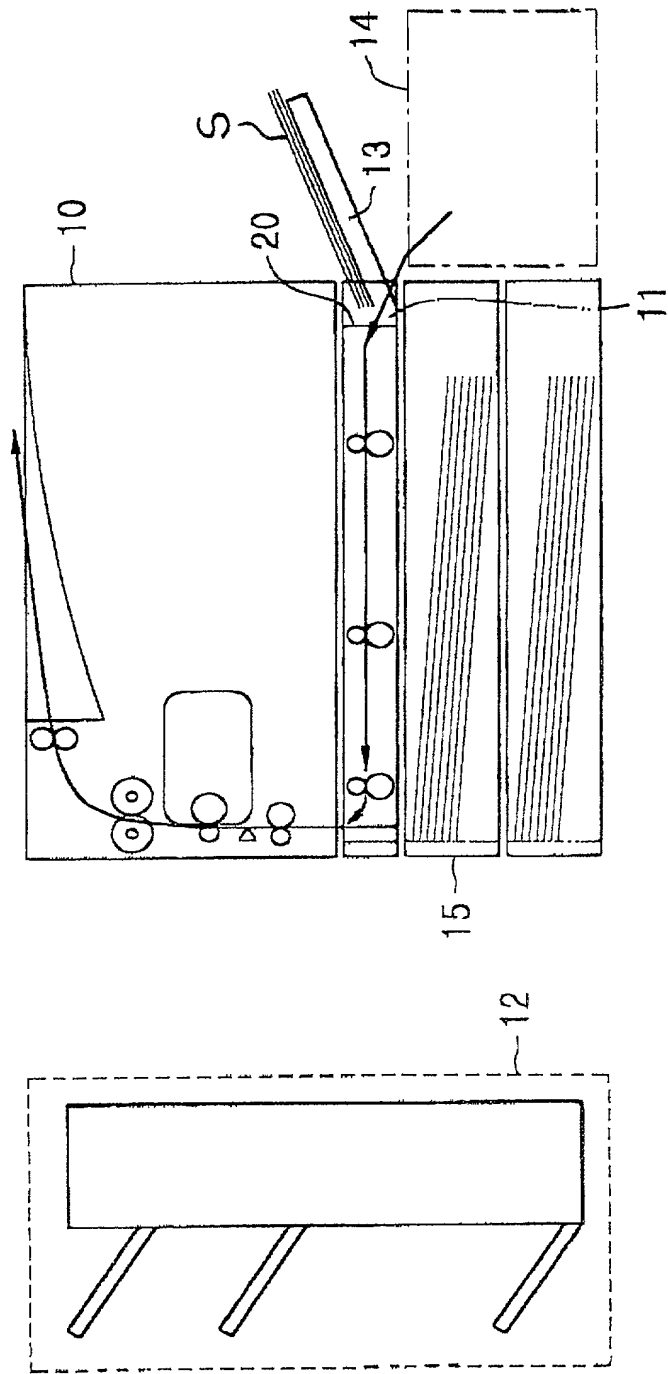


FIG. 4

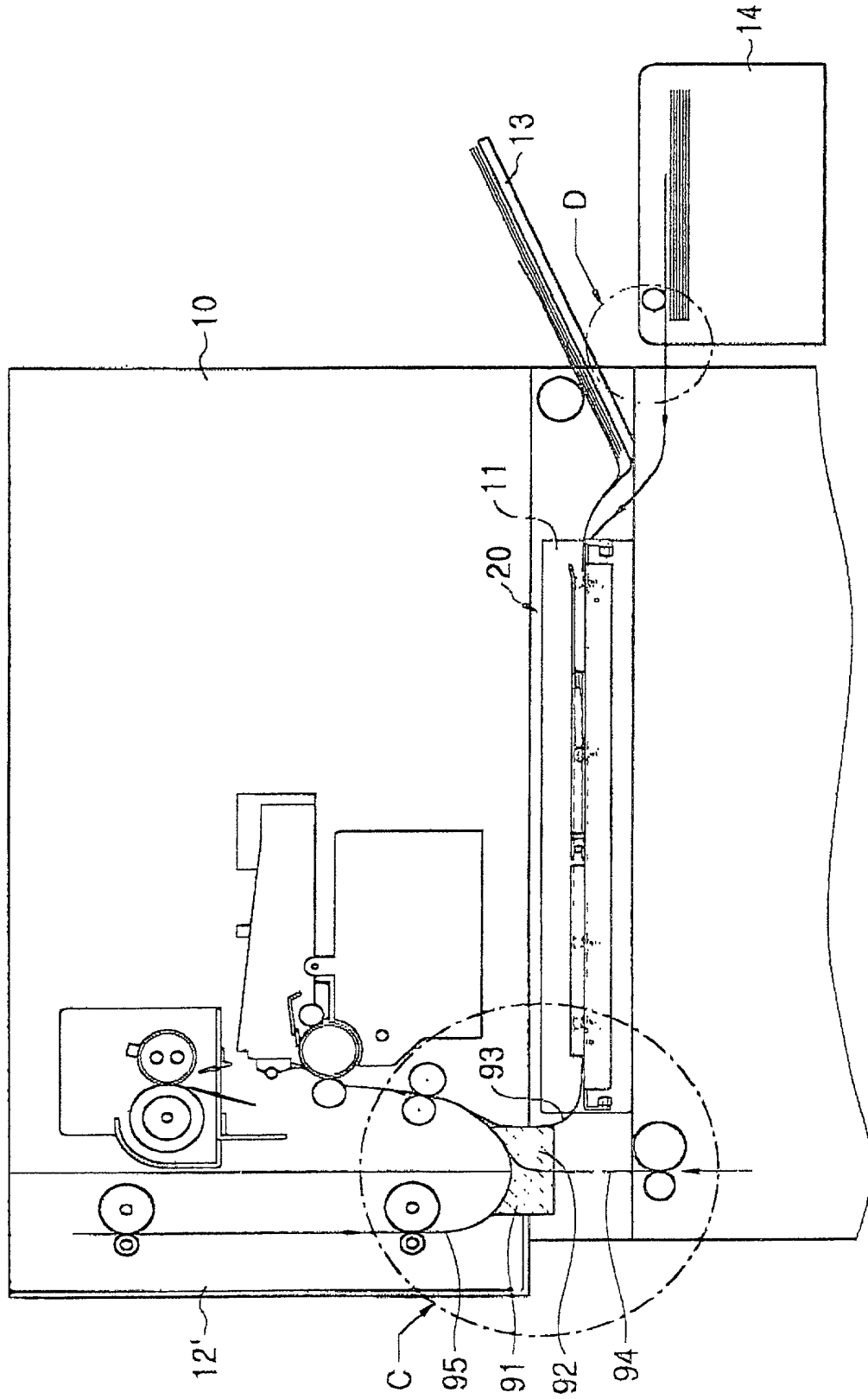








FIG. 7

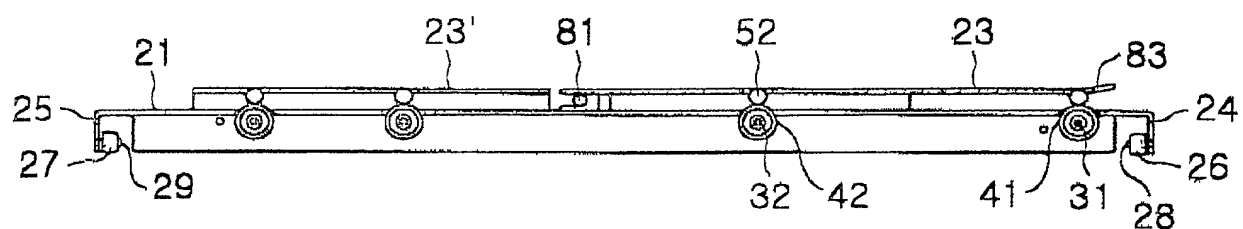


FIG. 8

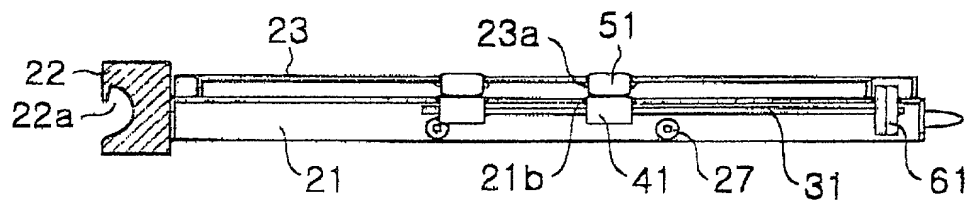


FIG. 9

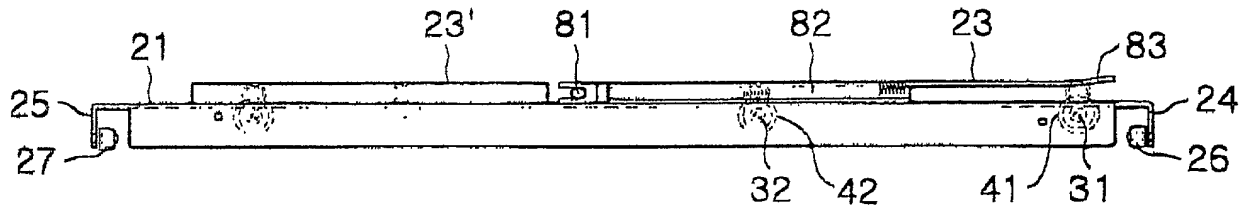


FIG. 10

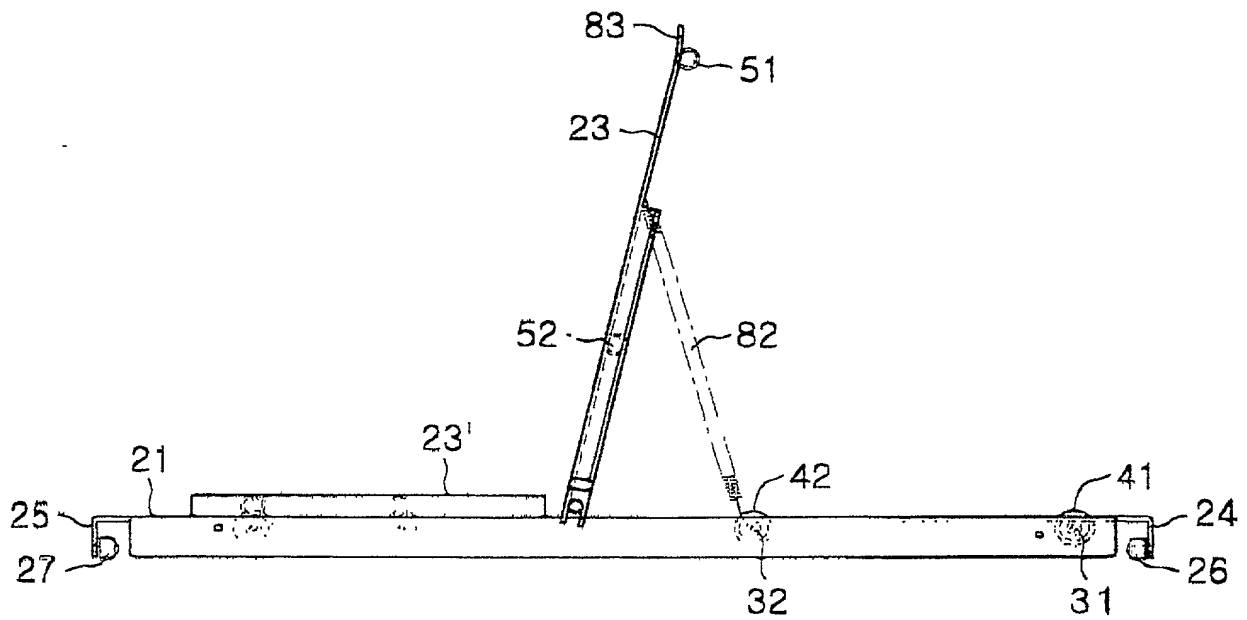


FIG. 11

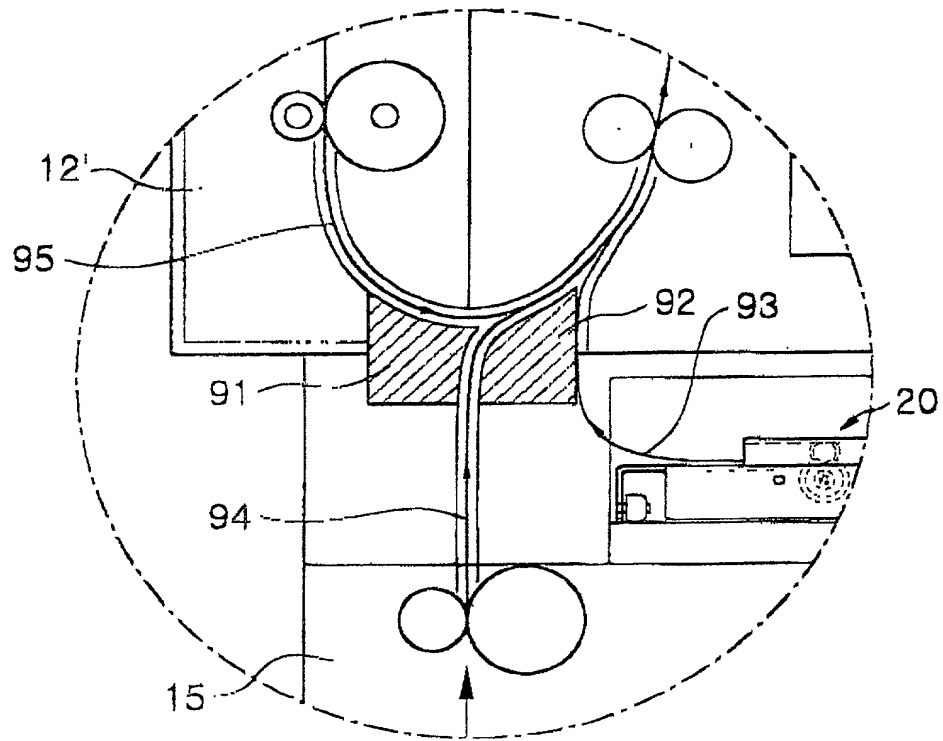
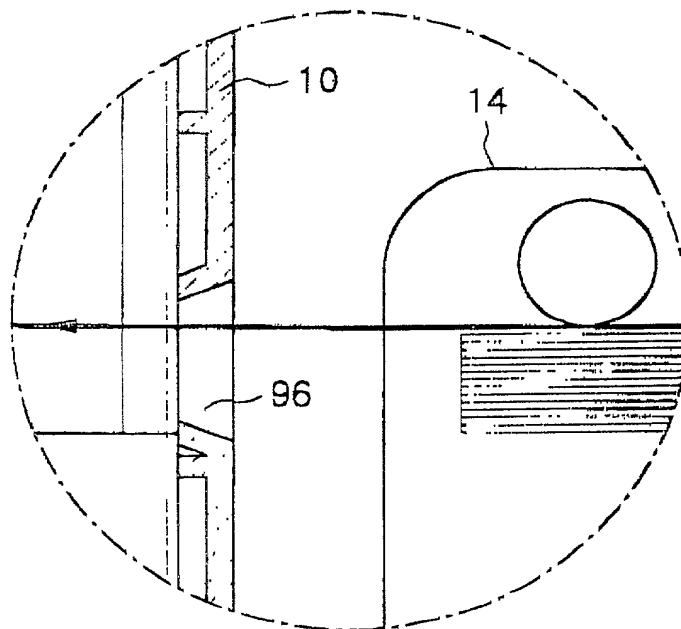


FIG. 12



**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of:

DEUK-SUNG LIM

Serial No.: *to be assigned*

Examiner: *to be assigned*

Filed: June 26, 2000

Art Unit: *to be assigned*

For: ELECTRO PHOTO MULTI FUNCTIONAL PERIPHERAL APPARATUS

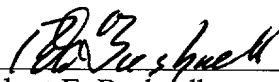
**TRANSMITTAL OF DECLARATION**

Assistant Commissioner  
for Patents  
Washington, D.C. 20231

Sir:

This transmittal accompanies a Declaration without the signature by the inventor, for the above-captioned application. Substitute Declaration with the inventor's signature will be filed upon receipt of the Serial No. for the above-captioned application.

Respectfully submitted,

  
\_\_\_\_\_  
Robert E. Bushnell,  
Attorney for the Applicant  
Registration No.: 27,774

Suite 300, 1522 "K" Street, N.W.  
Washington, D.C. 20005  
(202) 408-9040

Folio: P56132  
Date: 06/26/00  
I.D.: REB/kf

AS A BELOW NAMED INVENTOR, I hereby declare that:

My residence, post office address and citizenship are as stated next to my name.

I believe that I am the original, first and sole (if only one name is listed below), or an original, first and joint inventor (if plural names are listed below), of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**TITLE: *ELECTRO PHOTO MULTI FUNCTIONAL PERIPHERAL APPARATUS***

the specification of which either is attached hereto or otherwise accompanies this Declaration, or:

☐ was filed in the U.S. Patent & Trademark Office on \_\_\_\_\_ and assigned Serial No. \_\_\_\_\_,

☐ and (if applicable) was amended on \_\_\_\_\_.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above. I acknowledge the duty to disclose information which is material to patentability and to the examination of this application in accordance with Title 37 of the Code of Federal Regulations §1.56. I hereby claim foreign priority benefits under Title 35, U.S. Code §119(a)-(d) or §365(b) of any foreign application(s) for patent or inventor's certificate, or §365(a) of any PCT International application which designated at least one country other than the United States, or §119(e) of any United States provisional application(s), listed below and have also identified below any foreign applications for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

23879/1999 Republic of Korea 24 June 1999  
(Application Number) (Country) (Day/Month/Year filed)

Priority Claimed:  
Yes [ X ] No [ ]

\_\_\_\_\_  
(Application Number) (Country) (Day/Month/Year filed)

Yes [ ] No [ ]

I hereby claim the benefit under Title 35, U.S. Code, §120, of any United States application(s), or §365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application(s) in the manner provided by the first paragraph of Title 35, U.S. Code, §112, I acknowledge the duty to disclose information material to patentability as defined in Title 37, The Code of Federal Regulations, §1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

\_\_\_\_\_  
(Application Serial No.) (Filing Date) (STATUS: patented, pending, abandoned)

\_\_\_\_\_  
(Application Serial No.) (Filing Date) (STATUS: patented, pending, abandoned)

I hereby revoke all previously granted powers of attorney and appoint the following attorneys: Robert E. Bushnell, Reg. No. 27,774, Michael D. Parker, Reg. No. 34,973, and Darren R. Crew, Reg. No. 37,806, to prosecute this application and to transact all business in the U.S. Patent & Trademark Office connected therewith and with any divisional, continuation, continuation-in-part, reissue or re-examination application, with full power of appointment and with full power to substitute an associate attorney or agent, and to receive all patents which may issue thereon, and request that all correspondence be addressed to:

Robert E. Bushnell,  
Attorney-at-Law  
Suite 300, 1522 "K" Street, N.W.  
Washington, D.C. 20005-1202  
Payor No. 008439  
Area Code: 202-408-9040

I HEREBY DECLARE that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 U.S. Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

FULL NAME OF FIRST OR SOLE INVENTOR: DEUK-SUNG LIM Citizenship: Republic of Korea

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Residence & Post Office Address: 603 Giryong Apt., 121-2 Sangal-li, Giheung-eup, Yongin. Kyungki-do. Republic of Korea

FULL NAME OF SECOND JOINT INVENTOR: \_\_\_\_\_ Citizenship: \_\_\_\_\_

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Residence & Post Office Address: \_\_\_\_\_

FULL NAME OF THIRD JOINT INVENTOR: \_\_\_\_\_ Citizenship: \_\_\_\_\_

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Residence & Post Office Address: \_\_\_\_\_

FULL NAME OF FOURTH JOINT INVENTOR: \_\_\_\_\_ Citizenship: \_\_\_\_\_

Inventor's signature: \_\_\_\_\_ Date: \_\_\_\_\_

Residence & Post Office Address: \_\_\_\_\_

☐ Additional inventors are being named on separately numbered sheets attached hereto.